



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2021-0728; Project Identifier MCAI-2020-00656-R; Amendment 39-21867; AD 2021-26-08]

RIN 2120-AA64

Airworthiness Directives; Bell Textron Canada Limited Helicopters

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for certain Bell Textron Canada Limited Model 206, 206A, 206A-1, 206B, 206B-1, 206L, 206L-1, 206L-3, and 206L-4 helicopters. This AD was prompted by reports of cracked or missing nuts on the tail rotor drive shaft (TRDS) disc pack (Thomas) couplings. This AD requires removing certain nuts from service, installing newly designed nuts, and applying a specific torque and a torque stripe to each newly installed nut. This AD then requires, after the installation of each newly designed nut, inspecting the torque and, depending on the inspection results, either applying a torque stripe or performing further inspections and removing certain parts from service. Finally, this AD prohibits installing any affected nut on any TRDS Thomas coupling. The FAA is issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of certain documents listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: For service information identified in this final rule, contact Bell Textron Canada Limited, 12,800 Rue de l'Avenir, Mirabel, Quebec J7J 1R4, Canada; telephone 1-450-437-2862 or 1-800-363-8023; fax 1-450-433-0272; email productsupport@bellflight.com; or at <https://www.bellflight.com/support/contact->

support. You may view the referenced service information at the FAA, Office of the Regional Counsel, Southwest Region, 10101 Hillwood Pkwy., Room 6N-321, Fort Worth, TX 76177. For information on the availability of this material at the FAA, call (817) 222-5110. Service information that is incorporated by reference is also available at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0728.

Examining the AD Docket

You may examine the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0728; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, the Transport Canada AD, any comments received, and other information. The street address for Docket Operations is U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

FOR FURTHER INFORMATION CONTACT: Matt Fuller, AD Program Manager, General Aviation & Rotorcraft Unit, Airworthiness Products Section, Operational Safety Branch, FAA, 10101 Hillwood Pkwy., Fort Worth, TX 76177; telephone (817) 222-5110; email matthew.fuller@faa.gov.

SUPPLEMENTARY INFORMATION:

Background

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to Bell Textron Canada Limited Model 206, 206A, 206A-1, 206B, 206B-1, 206L, 206L-1, 206L-3, and 206L-4 helicopters with nut part number (P/N) MS21042L4 or P/N MS21042L5 installed on the TRDS Thomas couplings. The NPRM published in the *Federal Register* on September 14, 2021 (86 FR 51038). In the NPRM, the FAA proposed to require, within 600 hours time-in-service (TIS) after the effective date of this AD, removing each affected nut from service, installing a newly designed nut, and applying a specific torque and a torque stripe to each newly installed nut. The NPRM also proposed to require, within 25 hours TIS after installation of each newly designed nut, inspecting the torque of each nut, and depending on the results of the inspection, further inspections and removing certain parts from

service. Finally, the NPRM proposed to prohibit installing any affected nut on any TRDS Thomas coupling.

The NPRM was prompted by a series of ADs issued by Transport Canada, which is the aviation authority for Canada. Initially, Transport Canada issued Canadian AD CF-2019-34, dated September 25, 2019 (Transport Canada AD CF-2019-34), to correct an unsafe condition for Bell Helicopter Textron Canada Limited (now Bell Textron Canada Limited) Model 206, 206A, 206A-1, 206B, 206B-1, 206L, 206L-1, 206L-3, and 206L-4 helicopters, all serial numbers. Transport Canada AD CF-2019-34 advised of reports of cracked or missing nuts at the TRDS Thomas couplings, which could have been caused by improper torque or hydrogen embrittlement. This condition, if not addressed, could result in loss of the tail rotor and subsequent loss of control of the helicopter.

After Transport Canada issued Transport Canada AD CF-2019-34, it was determined that helicopters modified in accordance with Supplemental Type Certificate (STC) SH2750NM or Transport Canada STC SH99-202, were not able to comply with Transport Canada AD CF-2019-34. Accordingly, Transport Canada issued AD CF-2020-15, dated May 13, 2020 (Transport Canada AD CF-2020-15) which supersedes Transport Canada AD CF-2019-34, and contains a new requirement for helicopters with STC SH2750NM or Transport Canada STC SH99-202 installed or models that have been modified per Bell Service Instruction BHT-206-SI-2052, Revision 1, dated October 14, 2010 (BHT-206-SI-2052). Transport Canada advises for certain model helicopters, the newly designed nuts cannot be installed because STC SH2750NM and Transport Canada STC SH99-202 install a pulley at the Thomas coupling location causing insufficient clearance. Transport Canada further advises for certain model helicopters with STC SH2750NM or Transport Canada STC SH99-202 installed, different part-numbered nuts may be installed which were not identified in the applicable service information and are now required to be replaced with a new part-numbered nut that is not vulnerable to the unsafe condition. Accordingly, Air Comm Corporation, the STC holder for STC SH2750NM, issued new service information to address these additional issues and provide newly developed instructions which apply to certain model helicopters with STC SH2750NM or Transport Canada STC SH99-202 installed.

Additionally, Transport Canada advises that BHT-206-SI-2052, which is optional, specifies procedures for Model 206L-1 and 206L-3 helicopters to upgrade the airframe and systems and also includes installation of the Model 206L-4 TRDS Thomas coupling. According to Transport Canada, models that have incorporated BHT-206-SI-2052, with STC SH2750NM or Transport Canada STC SH99-202 installed, will have the Model 206L-4 helicopter pulley configuration and are subject to the Air Comm Corporation service information.

Accordingly, Transport Canada AD CF-2020-15 requires the replacement of the affected nuts with the newly designed nuts at each TRDS Thomas coupling.

Discussion of Final Airworthiness Directive

Comments

The FAA received comments from one commenter; Bell. Bell recommended certain changes pertaining to the torque limits applied to each newly installed nut and the time for performing the torque recheck. The following presents the comments received on the NPRM and the FAA's response to each comment.

Bell commented that the NPRM calls for an initial torque of 50 in/lb to each nut, whereas the Bell maintenance manual requires an initial torque of 50-70 in/lb to each nut. Additionally, Bell explained that, as per its Standards Practice Manual (BHT-ALL-SPM) Chapter 2, tare torque must also be taken into consideration for self-locking hardware and that the total assembly torque is the measured tare torque plus the standard torque or specified torque. Bell requested that the installation torque in the AD be revised to read 50-70 in/lb.

The FAA agrees that in this instance the maximum initial torque limit and the tare torque should be consistent with Bell's maintenance manuals and has revised this AD accordingly.

Bell also commented that the NPRM calls for the torque recheck to be performed within 25 hours, whereas its maintenance manual requires the torque recheck between 10 – 25 hours. Bell recommended that the torque recheck be done within 25 hours TIS. The

FAA agrees with the comment but no changes to this AD were necessary.

Conclusion

These helicopters have been approved by the aviation authority of Canada and are approved for operation in the United States. Pursuant to the FAA's bilateral agreement with Canada, Transport Canada, its technical representative, has notified the FAA of the unsafe condition described in its AD. The FAA reviewed the relevant data, considered the comments received, and determined that air safety requires adopting this AD as proposed. Accordingly, the FAA is issuing this AD to address the unsafe condition on these helicopters. However, after the NPRM was published, the FAA discovered that costs were inadvertently excluded in the NPRM; those costs, which are nominal, are included in this final rule. Except for minor editorial changes, the change to the costs of compliance, and any other changes described previously, this AD is adopted as proposed in the NPRM. None of the changes will significantly increase the economic burden on any operator.

Related Service Information Under 1 CFR Part 51

The FAA reviewed Bell Alert Service Bulletin 206-19-136, dated August 27, 2019 for FAA-certificated Model 206, 206A-series, and 206B-series helicopters and non FAA-certificated Model TH-67 helicopters and Bell Alert Service Bulletin 206L-19-181, Revision A, dated August 29, 2019 for Model 206L, 206L-1, 206L-3, and 206L-4 helicopters. This service information specifies procedures for replacing the affected nuts with the newly designed corrosion-resistant nuts.

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

Other Related Service Information

The FAA reviewed Air Comm Corporation Service Bulletin SB 206EC-092619, Revision NC, dated September 26, 2019, which also specifies procedures for replacing the affected nuts with the newly designed corrosion-resistant nuts, but explains that affected helicopters equipped with Air Comm Corporation air conditioning systems installed under STC SH2750NM use the affected nut to attach a pulley onto the TRDS,

which causes clearance issues for the nuts to be installed at the coupling. Therefore, this service bulletin specifies replacing the nut with a lower profile nut.

The FAA also reviewed BHT-206-SI-2052. This service information specifies procedures to upgrade Model 206L-1 and 206L-3 helicopters to allow operations at an increased internal gross weight.

Differences Between this AD and the Transport Canada AD

Transport Canada AD CF-2020-15 requires compliance within 600 hours air time or within the next 24-months, whichever occurs first, whereas this AD requires compliance within 600 hours TIS and an additional inspection within 25 hours TIS after installation of certain nuts.

Costs of Compliance

The FAA estimates that this AD affects 1,439 helicopters of U.S. Registry. Labor rates are estimated at \$85 per work-hour. Based on these numbers, the FAA estimates the following costs to comply with this AD.

Replacing each affected nut with the newly designed nut and applying torque and a torque stripe will take about 4 work-hours, and parts will cost about \$75 for an estimated cost of \$415 per nut replacement and \$597,185 per nut replacement for the U.S. fleet.

Checking the torque, and if applicable, applying a torque stripe, will take a minimal amount of time and have a nominal parts cost. If required, inspecting each TRDS Thomas coupling, and each bolt, nut, and washer for elongated holes and fretting on the fasteners will take about 0.5 work-hour for an estimated cost of \$43 per inspection. Replacing each TRDS Thomas coupling will take about 4 work-hours, and parts will cost about \$4,000 for an estimated cost of \$4,340 per TRDS Thomas coupling replacement. Replacing each nut will take about 4 work-hours, and parts will cost about \$75 for an estimated cost of \$415 per nut replacement. Replacing a bolt or washer will take a minimal amount of time and parts will cost a nominal amount.

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator.

Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a "significant regulatory action" under Executive Order 12866,
- (2) Will not affect intrastate aviation in Alaska, and
- (3) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new airworthiness directive:

2021-26-08 Bell Textron Canada Limited: Amendment 39-21867; Docket No. FAA-2021-0728; Project Identifier MCAI-2020-00656-R.

(a) Effective Date

This airworthiness directive (AD) is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to Bell Textron Canada Limited Model 206, 206A, 206A-1, 206B, 206B-1, 206L, 206L-1, 206L-3, and 206L-4 helicopters, certificated in any category, with nut part number (P/N) MS21042L4 or P/N MS21042L5 installed on the tail rotor drive shaft (TRDS) disc pack (Thomas) couplings.

Note 1 to paragraph (c): Helicopters with an OH-58A designation are Model 206A-1 helicopters.

(d) Subject

Joint Aircraft Service Component (JASC) Code: 6510, Tail Rotor Drive Shaft.

(e) Unsafe Condition

This AD was prompted by reports of cracked or missing nuts installed on the TRDS Thomas couplings. The FAA is issuing this AD to prevent failure or loss of a nut on the TRDS Thomas couplings. The unsafe condition, if not addressed, could result in loss of the tail rotor and subsequent loss of control of the helicopter.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Required Actions

(1) Within 600 hours time-in-service (TIS) after the effective date of this AD:

(i) For helicopters that have not been modified by installing Supplemental Type Certificate (STC) SH2750NM:

(A) Remove each nut P/N MS21042L4 installed on each TRDS Thomas coupling from service, and replace with nut P/N NAS9926-4L. The location of nut P/N NAS9926-4L is depicted in Detail A Figure 1 of Bell Alert Service Bulletin (ASB) 206-19-136,

dated August 27, 2019 (ASB 206-19-136) or Bell ASB 206L-19-181, Revision A, dated August 29, 2019 (ASB 206L-19-181), as applicable to your model helicopter.

(B) Apply a torque of 5.65-7.90 Nm (50-70 in lb) plus tare torque to each nut installed as required by paragraph (g)(1)(i)(A) of this AD, and apply a torque stripe using torque seal lacquer (C-049) or equivalent lacquer, as shown in Figure 2 of ASB 206-19-136 or ASB 206L-19-181, as applicable to your model helicopter.

Note 2 to paragraph (g)(1)(i)(B): Torque stripes are referred to as witness marks in ASB 206-19-136 and ASB 206L-19-181.

(ii) For Bell Textron Canada Limited Model 206, 206A, 206A-1, 206B, 206B-1, and 206L helicopters that have been modified by installing STC SH2750NM and Model 206L-1 and 206L-3 helicopters that have been modified by installing STC SH2750NM but have not been modified by accomplishing Bell Service Instruction BHT-206-SI-2052, Revision 1, dated October 14, 2010 (BHT-206-SI-2052):

(A) Remove each nut P/N MS21042L4 installed on each TRDS Thomas coupling from service, except for nuts P/N MS21042L4 installed on the forward short TRDS Thomas coupling, and replace with nut P/N NAS9926-4L. The location of nut P/N NAS9926-4L is depicted in Detail A Figure 1 of ASB 206-19-136 or ASB 206L-19-181 as applicable to your model helicopter.

(B) Remove each nut P/N MS21042L4 installed on the forward short TRDS Thomas coupling from service and replace with nut P/N 90-132L4.

(C) For each nut installed as required by paragraphs (g)(1)(ii)(A) and (B) of this AD, apply a torque of 5.65-7.90 Nm (50-70 in lb) plus tare torque to each nut and apply a torque stripe using torque seal lacquer (C-049) or equivalent lacquer, as shown in Figure 2 of ASB 206-19-136 or ASB 206L-19-181, as applicable to your model helicopter.

(iii) For Bell Textron Canada Limited Model 206L-1 and 206L-3 helicopters that have been modified by installing STC SH2750NM and have been modified by accomplishing BHT-206-SI-2052:

(A) Remove each nut P/N MS21042L4 installed on each TRDS Thomas coupling from service, except for nuts P/N MS21042L4 installed on the forward short TRDS Thomas coupling, and replace with nut P/N NAS9926-4L. The location of nut P/N

NAS9926-4L is depicted in Detail A Figure 1 of ASB 206L-19-181.

(B) Remove each nut P/N MS21042L4 installed on the forward short TRDS Thomas coupling from service and replace with nut P/N 90-132L4.

(C) For each nut installed as required by paragraphs (g)(1)(iii)(A) and (B) of this AD, apply a torque of 5.65-7.90 Nm (50-70 in lb) plus tare torque to each nut, and apply a torque stripe using torque seal lacquer (C-049) or equivalent lacquer, as shown in Figure 2 of ASB 206L-19-181.

(iv) For Bell Textron Canada Limited Model 206L-4 helicopters that have been modified by installing STC SH2750NM:

(A) Remove each nut P/N MS21042L4 installed on each TRDS Thomas coupling from service, except for nuts P/N MS21042L4 installed on the forward short TRDS Thomas coupling, and replace with nut P/N NAS9926-4L. The location of nut P/N NAS9926-4L is depicted in Detail A Figure 1 of ASB 206L-19-181.

(B) Remove from service each nut P/N MS21042L5 installed on the forward short TRDS Thomas coupling and replace with nut P/N 90-132L5.

(C) For each nut installed as required by paragraphs (g)(1)(iv)(A) and (B) of this AD, apply a torque of 5.65-7.90 Nm (50-70 in lb) plus tare torque to each nut, and apply a torque stripe using torque seal lacquer (C-049) or equivalent lacquer, as shown in Figure 2 of ASB 206L-19-181.

(2) Within 25 hours TIS after installation of any nut P/N NAS9926-4L, P/N 90-132L4, or P/N 90-132L5, as required by paragraphs (g)(1)(i)(A), (ii)(A) and (B), (iii)(A) and (B), or (iv)(A) and (B) of this AD, apply a torque of 5.65 Nm (50 in lb) to each nut.

(i) If the nut does not move, apply a torque stripe using torque seal lacquer (C-049) or equivalent lacquer, as shown in Figure 2 of ASB 206-19-136 or ASB 206L-19-181, as applicable to your model helicopter.

(ii) If any nut moves, inspect each TRDS Thomas coupling and each bolt, nut, and washer for elongated holes and fretting on the fasteners. If any TRDS Thomas coupling has an elongated hole, remove the TRDS Thomas coupling from service. If any bolt, nut, or washer has any fretting, remove the affected part from service.

(3) As of the effective date of this AD, do not install nut P/N MS21042L4 or

MS21042L5 on any TRDS Thomas coupling.

(h) Alternative Methods of Compliance (AMOCs)

(1) The Manager, International Validation Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the International Validation Branch, send it to the attention of the person identified in paragraph (i)(1) of this AD. Information may be emailed to: 9-AVS-AIR-730-AMOC@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(i) Related Information

(1) For more information about this AD, contact Matt Fuller, AD Program Manager, General Aviation & Rotorcraft Unit, Airworthiness Products Section, Operational Safety Branch, FAA, 10101 Hillwood Pkwy., Fort Worth, TX 76177; telephone (817) 222-5110; email matthew.fuller@faa.gov.

(2) Bell Service Instruction BHT-206-SI-2052, Revision 1, dated October 14, 2010, which is not incorporated by reference, contains additional information about the subject of this AD. This service information is available at the contact information specified in paragraphs (j)(3) and (4) of this AD.

(3) The subject of this AD is addressed in Transport Canada AD CF-2020-15, dated May 13, 2020. You may view the Transport Canada AD at <https://www.regulations.gov> in Docket No. FAA-2021-0728.

(j) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Bell Alert Service Bulletin 206-19-136, dated August 27, 2019.

(ii) Bell Alert Service Bulletin 206L-19-181, Revision A, dated August 29, 2019.

(3) For Bell service information identified in this AD, contact Bell Textron Canada Limited, 12,800 Rue de l'Avenir, Mirabel, Quebec J7J 1R4, Canada; telephone 1-450-437-2862 or 1-800-363-8023; fax 1-450-433-0272; email productsupport@bellflight.com; or at <https://www.bellflight.com/support/contact-support>.

(4) You may view this service information at the FAA, Office of the Regional Counsel, Southwest Region, 10101 Hillwood Pkwy., Room 6N-321, Fort Worth, TX 76177. For information on the availability of this material at the FAA, call (817) 222-5110.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email: fr.inspection@nara.gov, or go to: <https://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued on December 12, 2021.

Ross Landes, Deputy Director for Regulatory Operations,
Compliance & Airworthiness Division,
Aircraft Certification Service.

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